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[redacted]

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August 30, 2001

Magalie Roman Salas
Secretary
Federal Communications Commission
445 12th Street, SW, TW-A325
Washington, DC 20554

RECEIVED
AUG 31 2001
FCC MAIL ROOM

RE: Docket CC 94-102 Phase II Implementation of E911

Dear Ms. Salas:

The letters attached herein were sent to eight wireless carriers in response to their E911 Phase II waiver requests. Our letters are to inform these carriers of Rosum Corporation's inexpensive and robust positioning technology that will prove to be an effective solution to E911.

The wireless carriers to whom we sent these letters are Verizon, Sprint, AT&T Wireless, Nextel Communications, VoiceStream Wireless, Hawaiian Wireless, Cincinnati Bell Wireless, and ALLTEL Communications. We have also sent similar letters to Cingular Wireless and Quest Wireless, LLC that were previously included in the FCC filings (Docket CC 94-102).

We respectfully request these copies to be included in Docket CC 94-102.

Thank you,

Morgan R. Branch

Morgan R. Branch
Rosum Corporation

No. of Copies rec'd 0
List ABCDE

Rosum Corporation
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Lawrence R. Krevor
Nextel Communications, Inc.
2001 Edmund Halley Drive
Reston, VA 20191

RE: E911 Phase II Waiver Request

August 27, 2001

To Mr. Krevor:

This communication is in response to your E911 Phase II waiver request on June 6, 2001. We would like to let you know about an inexpensive and robust handset positioning solution that will meet the FCC standards for accuracy.

In December 2000, Rosum Corporation ("Rosum") through Dr. Matthew Rabinowitz and Dr. James Spilker, the architect of the Global Positioning System, began investigating a new idea for positioning mobile devices. The new idea is to use high power digital television ("DTV") signals, which will soon cover the United States and several other countries. Today, Rosum's idea of using high power DTV appears to solve the E911 problem more effectively and more economically than any of the alternatives.

In April 2001, Rosum began proprietary discussions with the primary cellular service providers and handset manufacturers. As a result of these discussions, Rosum is convinced that its DTV-based solution to Phase II E911 is cheaper and will perform better than any of the existing technologies. We realize that our DTV-based technology is entering the E911 arena at a very late stage. However, given that Nextel is applying for a waiver of the FCC's October 2001 deadline, we feel that our new technology could provide the right solution for the E911 issue.

What follows is an overview of our solution. More information is available at www.rosum.com and detailed technical documentation is available upon request.

> In order to position wireless devices indoors and outdoors throughout the United States, Rosum Corporation determines the range to high-power DTV transmitters. The FCC has mandated that all television stations broadcast a digital signal according to the ATSC (Advanced Television Systems Committee) format. The synchronization codes embedded in the ATSC DTV signals can be used for very

robust, accurate ranging with low cost hardware, and very low computational requirements. In order to range from the DTV signal, it is not necessary to demodulate the actual DTV data. Consequently, the ranging receiver has a processing gain of roughly 50dB above that of a standard television receiver. As a result, signals may be used well beyond the standard DTV coverage areas, and the availability and geometry of signals for positioning is substantially better than that provided by GPS (Global Positioning System). The DTV signal has a huge power advantage over GPS since DTV transmitters are broadcasting signals at the Megawatt level from a distance of roughly 100 kilometers, while GPS is broadcasting a signal of a few tens of Watts from a distance of roughly 20,000 kilometers. Due to the high power and low duty factor of the DTV signal used for ranging, the receiver processing requirements are minimal. Consequently, the positioning technique can accommodate far cheaper and lower power devices than a GPS technique would require. The signal has roughly six times the bandwidth of GPS, consequently, the effects of urban and indoor multipath are substantially mitigated. The full rollout of the DTV is slated to occur by May 1, 2002 for commercial broadcast stations, and by May 1, 2003 for public broadcast stations. Our technique requires no changes to the digital broadcast stations.

Unlike the terrestrial AOA/TOA (Angle-of-Arrival/Time-of-Arrival) positioning systems for cell phones, this technique requires no change to the hardware of the cellular base station. When used to position cell phones, the technique is independent of the air-interface, such as GSM (global system for mobile communications) or CDMA (code division multiple access). Since a wide range of UHF frequencies have been allocated to DTV transmitters, there is redundancy built into the system to protect against deep fades on particular frequencies due to absorption, multipath and other attenuating effects. Since Rosum technology makes use of pre-existing infrastructure, pre-allocated spectrum, and does not become obsolete when the cellular protocols change, the cost of the system is far less than techniques requiring upgrades to the cellular network. Unlike the terrestrial AOA/TOA systems, our technique can achieve positioning accuracies of a few meters. The Rosum technology may be used to position cell phones, PDA's (personal digital assistants), pagers, cars, OCDMA (orthogonal code division multiple access) transceivers and a host of other devices.

Thank you for your time and we look forward to speaking with you.

Morgan R. Branch
Rosum Corporation

Cc: Magalie Roman Salas, Office of the Secretary, Federal Communications Commission

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Douglas I. Brandon
Vice President - External Affairs
AT&T Wireless Services, Inc.
1150 Connecticut Avenue, N.W.
Washington, D.C. 20036

RE: E911 Phase II Waiver Request

August 27, 2001

To Mr. Douglas I. Brandon:

This communication is in response to your E911 Phase II waiver request on April 4, 2001. We would like to let you know about an inexpensive and robust handset positioning solution that will meet the FCC standards for accuracy.

In December 2000, Rosum Corporation ("Rosum") through Dr. Matthew Rabinowitz and Dr. James Spilker, the architect of the Global Positioning System, began investigating a new idea for positioning mobile devices. The new idea is to use high power digital television ("DTV") signals, which will soon cover the United States and several other countries. Today, Rosum's idea of using high power DTV appears to solve the E911 problem more effectively and more economically than any of the alternatives.

In April 2001, Rosum began proprietary discussions with the primary cellular service providers and handset manufacturers. As a result of these discussions, Rosum is convinced that its DTV-based solution to Phase II E911 is cheaper and will perform better than any of the existing technologies. We realize that our DTV-based technology is entering the E911 arena at a very late stage. However, given that AT&T Wireless is applying for a waiver of the FCC's October 2001 deadline, we feel that our new technology could provide the right solution for the E911 issue.

What follows is an overview of our solution. More information is available at www.rosum.com and detailed technical documentation is available upon request.

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synchronization codes embedded in the ATSC DTV signals can be used for very robust, accurate ranging with low cost hardware, and very low computational requirements. In order to range from the DTV signal, it is not necessary to demodulate the actual DTV data. Consequently, the ranging receiver has a processing gain of roughly 50dB above that of a standard television receiver. As a result, signals may be used well beyond the standard DTV coverage areas, and the availability and geometry of signals for positioning is substantially better than that provided by GPS (Global Positioning System). The DTV signal has a huge power advantage over GPS since DTV transmitters are broadcasting signals at the Megawatt level from a distance of roughly 100 kilometers, while GPS is broadcasting a signal of a few tens of Watts from a distance of roughly 20,000 kilometers. Due to the high power and low duty factor of the DTV signal used for ranging, the receiver processing requirements are minimal. Consequently, the positioning technique can accommodate far cheaper and lower power devices than a GPS technique would require. The signal has roughly six times the bandwidth of GPS, consequently, the effects of urban and indoor multipath are substantially mitigated. The full rollout of the DTV is slated to occur by May 1, 2002 for commercial broadcast stations, and by May 1, 2003 for public broadcast stations. Our technique requires no changes to the digital broadcast stations.

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Thank you for your time and we look forward to speaking with you.

Morgan R. Branch
Rosum Corporation

Cc: Magalie Roman Salas, Office of the Secretary, Federal Communications Commission

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Redwood City, CA 94063
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Brian T. O'Connor
VoiceStream Wireless Corporation
401 9th Stream, N.W., Suite 550
Washington, D.C. 20554

RE: E911 Phase II Waiver Request

August 27, 2001

To Mr. O'Connor:

This communication is in response to your E911 Phase II waiver request on June 6, 2001. We would like to let you know about an inexpensive and robust handset positioning solution that will meet the FCC standards for accuracy.

In December 2000, Rosum Corporation ("Rosum") through Dr. Matthew Rabinowitz and Dr. James Spilker, the architect of the Global Positioning System, began investigating a new idea for positioning mobile devices. The new idea is to use high power digital television ("DTV") signals, which will soon cover the United States and several other countries. Today, Rosum's idea of using high power DTV appears to solve the E911 problem more effectively and more economically than any of the alternatives.

In April 2001, Rosum began proprietary discussions with the primary cellular service providers and handset manufacturers. As a result of these discussions, Rosum is convinced that its DTV-based solution to Phase II E911 is cheaper and will perform better than any of the existing technologies. We realize that our DTV-based technology is entering the E911 arena at a very late stage. However, given that VoiceStream Wireless is applying for a waiver of the FCC's October 2001 deadline, we feel that our new technology could provide the right solution for the E911 issue.

What follows is an overview of our solution. More information is available at www.rosum.com and detailed technical documentation is available upon request.

> In order to position wireless devices indoors and outdoors throughout the United States, Rosum Corporation determines the range to high-power DTV transmitters. The FCC has mandated that all television stations broadcast a digital signal according to the ATSC (Advanced Television Systems Committee) format. The synchronization codes embedded in the ATSC DTV signals can be used for very

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Thank you for your time and we look forward to speaking with you.

Morgan R. Branch
Rosum Corporation

Cc: Magalie Roman Salas, Office of the Secretary, Federal Communications Commission

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Robert A. Calaff
VoiceStream Wireless Corporation
401 9th Stream, N.W., Suite 550
Washington, D.C. 20554

RE: E911 Phase II Waiver Request

August 27, 2001

To Mr. Calaff:

This communication is in response to your E911 Phase II waiver request on June 6, 2001. We would like to let you know about an inexpensive and robust handset positioning solution that will meet the FCC standards for accuracy.

In December 2000, Rosum Corporation ("Rosum") through Dr. Matthew Rabinowitz and Dr. James Spilker, the architect of the Global Positioning System, began investigating a new idea for positioning mobile devices. The new idea is to use high power digital television ("DTV") signals, which were broadcast for the first time last year and which will soon cover the United States and several other countries. Today, Rosum's idea of using high power DTV appears to solve the E911 problem more effectively and more economically than any of the alternatives.

In April 2001, Rosum began proprietary discussions with the primary cellular service providers and handset manufacturers. As a result of these discussions, Rosum is convinced that its DTV-based solution to Phase II E911 is cheaper and will perform better than any of the existing technologies. We realize that our DTV-based technology is entering the E911 arena at a very late stage. However, given that VoiceStream Wireless is applying for a waiver of the FCC's October 2001 deadline, we feel that our new technology could provide the right solution for the E911 issue.

What follows is an overview of our solution. More information is available at www.rosum.com and detailed technical documentation is available upon request.

> In order to position wireless devices indoors and outdoors throughout the United States, Rosum Corporation determines the range to high-power DTV transmitters. The FCC has mandated that all television stations broadcast a digital signal according to the ATSC (Advanced Television Systems Committee) format. The

synchronization codes embedded in the ATSC DTV signals can be used for very robust, accurate ranging with low cost hardware, and very low computational requirements. In order to range from the DTV signal, it is not necessary to demodulate the actual DTV data. Consequently, the ranging receiver has a processing gain of roughly 50dB above that of a standard television receiver. As a result, signals may be used well beyond the standard DTV coverage areas, and the availability and geometry of signals for positioning is substantially better than that provided by GPS (Global Positioning System). The DTV signal has a huge power advantage over GPS since DTV transmitters are broadcasting signals at the Megawatt level from a distance of roughly 100 kilometers, while GPS is broadcasting a signal of a few tens of Watts from a distance of roughly 20,000 kilometers. Due to the high power and low duty factor of the DTV signal used for ranging, the receiver processing requirements are minimal. Consequently, the positioning technique can accommodate far cheaper and lower power devices than a GPS technique would require. The signal has roughly six times the bandwidth of GPS, consequently, the effects of urban and indoor multipath are substantially mitigated. The full rollout of the DTV is slated to occur by May 1, 2002 for commercial broadcast stations, and by May 1, 2003 for public broadcast stations. Our technique requires no changes to the digital broadcast stations.

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Thank you for your time and we look forward to speaking with you.

Morgan R. Branch
Rosum Corporation

Cc: Magalie Roman Salas, Office of the Secretary, Federal Communications Commission

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Charles W. McKee
General Attorney
Sprint PCS
6160 Sprint Parkway
Mail Stop: KSOPHIO414-4A325
Overland Park, KS 66251

RE: E911 Phase II Waiver Request

August 27, 2001

To Mr. Charles W. McKee:

This communication is in response to your E911 Phase II waiver request on August 1, 2001. We would like to let you know about an inexpensive and robust handset positioning solution that will meet the FCC standards for accuracy.

In December 2000, Rosum Corporation ("Rosum") through Dr. Matthew Rabinowitz and Dr. James Spilker, the architect of the Global Positioning System, began investigating a new idea for positioning mobile devices. The new idea is to use high power digital television ("DTV") signals, which will soon cover the United States and several other countries. Today, Rosum's idea of using high power DTV appears to solve the E911 problem more effectively and more economically than any of the alternatives.

In April 2001, Rosum began proprietary discussions with the primary cellular service providers and handset manufacturers. As a result of these discussions, Rosum is convinced that its DTV-based solution to Phase II E911 is cheaper and will perform better than any of the existing technologies. We realize that our DTV-based technology is entering the E911 arena at a very late stage. However, given that Sprint PCS is applying for a waiver of the FCC's October 2001 deadline, we feel that our new technology could provide the right solution for the E911 issue.

What follows is an overview of our solution. More information is available at www.rosum.com and detailed technical documentation is available upon request.

> In order to position wireless devices indoors and outdoors throughout the United States, Rosum Corporation determines the range to high-power DTV transmitters. The FCC has mandated that all television stations broadcast a digital signal

according to the ATSC (Advanced Television Systems Committee) format. The synchronization codes embedded in the ATSC DTV signals can be used for very robust, accurate ranging with low cost hardware, and very low computational requirements. In order to range from the DTV signal, it is not necessary to demodulate the actual DTV data. Consequently, the ranging receiver has a processing gain of roughly 50dB above that of a standard television receiver. As a result, signals may be used well beyond the standard DTV coverage areas, and the availability and geometry of signals for positioning is substantially better than that provided by GPS (Global Positioning System). The DTV signal has a huge power advantage over GPS since DTV transmitters are broadcasting signals at the Megawatt level from a distance of roughly 100 kilometers, while GPS is broadcasting a signal of a few tens of Watts from a distance of roughly 20,000 kilometers. Due to the high power and low duty factor of the DTV signal used for ranging, the receiver processing requirements are minimal. Consequently, the positioning technique can accommodate far cheaper and lower power devices than a GPS technique would require. The signal has roughly six times the bandwidth of GPS, consequently, the effects of urban and indoor multipath are substantially mitigated. The full rollout of the DTV is slated to occur by May 1, 2002 for commercial broadcast stations, and by May 1, 2003 for public broadcast stations. Our technique requires no changes to the digital broadcast stations.

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We are providing courtesy copies of this communication to those individuals at the FCC listed below. Thank you for your time and we look forward to speaking with you.

Morgan R. Branch
Rosum Corporation

Cc: Magalie Roman Salas, Office of the Secretary, Federal Communications Commission

[redacted]

Rosum Corporation
1900 Broadway, Suite 203
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Charon J. Harris
Verizon Wireless
1300 I Street, N.W., Suite 400 West
Washington, D.C. 20005

RE: E911 Phase II Waiver Request

August 27, 2001

To Charon J. Harris:

This communication is in response to your E911 Phase II waiver request on July 25, 2001. We would like to let you know about an inexpensive and robust handset positioning solution that will meet the FCC standards for accuracy.

In December 2000, Rosum Corporation ("Rosum") through Dr. Matthew Rabinowitz and Dr. James Spilker, the architect of the Global Positioning System, began investigating a new idea for positioning mobile devices. The new idea is to use high power digital television ("DTV") signals, which will soon cover the United States and several other countries. Today, Rosum's idea of using high power DTV appears to solve the E911 problem more effectively and more economically than any of the alternatives.

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Morgan R. Branch
Rosum Corporation

Cc: Magalie Roman Salas, Office of the Secretary, Federal Communications Commission

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Lolita D. Smith
Verizon Wireless
1300 I Street, N.W., Suite 400 West
Washington, D.C. 20005

RE: E911 Phase II Waiver Request

August 27, 2001

To Ms. Smith:

This communication is in response to your E911 Phase II waiver request on July 25, 2001. We would like to let you know about an inexpensive and robust handset positioning solution that will meet the FCC standards for accuracy.

In December 2000, Rosum Corporation ("Rosum") through Dr. Matthew Rabinowitz and Dr. James Spilker, the architect of the Global Positioning System, began investigating a new idea for positioning mobile devices. The new idea is to use high power digital television ("DTV") signals, which will soon cover the United States and several other countries. Today, Rosum's idea of using high power DTV appears to solve the E911 problem more effectively and more economically than any of the alternatives.

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Rosum Corporation
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Stephen J. Berman
Verizon Wireless
1300 I Street, N.W., Suite 400 West
Washington, D.C. 20005

RE: E911 Phase II Waiver Request

August 27, 2001

To Mr. Berman:

This communication is in response to your E911 Phase II waiver request on July 25, 2001. We would like to let you know about an inexpensive and robust handset positioning solution that will meet the FCC standards for accuracy.

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robust, accurate ranging with low cost hardware, and very low computational requirements. In order to range from the DTV signal, it is not necessary to demodulate the actual DTV data. Consequently, the ranging receiver has a processing gain of roughly 50dB above that of a standard television receiver. As a result, signals may be used well beyond the standard DTV coverage areas, and the availability and geometry of signals for positioning is substantially better than that provided by GPS (Global Positioning System). The DTV signal has a huge power advantage over GPS since DTV transmitters are broadcasting signals at the Megawatt level from a distance of roughly 100 kilometers, while GPS is broadcasting a signal of a few tens of Watts from a distance of roughly 20,000 kilometers. Due to the high power and low duty factor of the DTV signal used for ranging, the receiver processing requirements are minimal. Consequently, the positioning technique can accommodate far cheaper and lower power devices than a GPS technique would require. The signal has roughly six times the bandwidth of GPS, consequently, the effects of urban and indoor multipath are substantially mitigated. The full rollout of the DTV is slated to occur by May 1, 2002 for commercial broadcast stations, and by May 1, 2003 for public broadcast stations. Our technique requires no changes to the digital broadcast stations.

Unlike the terrestrial AOA/TOA (Angle-of-Arrival/Time-of-Arrival) positioning systems for cell phones, this technique requires no change to the hardware of the cellular base station. When used to position cell phones, the technique is independent of the air-interface, such as GSM (global system for mobile communications) or CDMA (code division multiple access). Since a wide range of UHF frequencies have been allocated to DTV transmitters, there is redundancy built into the system to protect against deep fades on particular frequencies due to absorption, multipath and other attenuating effects. Since Rosum technology makes use of pre-existing infrastructure, pre-allocated spectrum, and does not become obsolete when the cellular protocols change, the cost of the system is far less than techniques requiring upgrades to the cellular network. Unlike the terrestrial AOA/TOA systems, our technique can achieve positioning accuracies of a few meters. The Rosum technology may be used to position cell phones, PDA's (personal digital assistants), pagers, cars, OCDMA (orthogonal code division multiple access) transceivers and a host of other devices.

Thank you for your time and we look forward to speaking with you.

Morgan R. Branch
Rosum Corporation

Cc: Magalie Roman Salas, Office of the Secretary, Federal Communications Commission

Rosum Corporation
1900 Broadway, Suite 203
Redwood City, CA 94063
Ph: (650) 298-9006 Fx: (650) 298-9084

Luisa L. Lancetti
Vice President, PCS Regulatory Affairs
401 9th Street, N.W., Suite 400
Washington, D.C. 20004

RE: E911 Phase II Waiver Request

August 27, 2001

To Ms. Luisa L. Lancetti:

This communication is in response to your E911 Phase II waiver request on August 1, 2001. We would like to let you know about an inexpensive and robust handset positioning solution that will meet the FCC standards for accuracy.

In December 2000, Rosum Corporation ("Rosum") through Dr. Matthew Rabinowitz and Dr. James Spilker, the architect of the Global Positioning System, began investigating a new idea for positioning mobile devices. The new idea is to use high power digital television ("DTV") signals, which will soon cover the United States and several other countries. Today, Rosum's idea of using high power DTV appears to solve the E911 problem more effectively and more economically than any of the alternatives.

In April 2001, Rosum began proprietary discussions with the primary cellular service providers and handset manufacturers. As a result of these discussions, Rosum is convinced that its DTV-based solution to Phase II E911 is cheaper and will perform better than any of the existing technologies. We realize that our DTV-based technology is entering the E911 arena at a very late stage. However, given that Sprint PCS is applying for a waiver of the FCC's October 2001 deadline, we feel that our new technology could provide the right solution for the E911 issue.

What follows is an overview of our solution. More information is available at www.rosum.com and detailed technical documentation is available upon request.

> In order to position wireless devices indoors and outdoors throughout the United States, Rosum Corporation determines the range to high-power DTV transmitters. The FCC has mandated that all television stations broadcast a digital signal according to the ATSC (Advanced Television Systems Committee) format. The synchronization codes embedded in the ATSC DTV signals can be used for very

robust, accurate ranging with low cost hardware, and very low computational requirements. In order to range from the DTV signal, it is not necessary to demodulate the actual DTV data. Consequently, the ranging receiver has a processing gain of roughly 50dB above that of a standard television receiver. As a result, signals may be used well beyond the standard DTV coverage areas, and the availability and geometry of signals for positioning is substantially better than that provided by GPS (Global Positioning System). The DTV signal has a huge power advantage over GPS since DTV transmitters are broadcasting signals at the Megawatt level from a distance of roughly 100 kilometers, while GPS is broadcasting a signal of a few tens of Watts from a distance of roughly 20,000 kilometers. Due to the high power and low duty factor of the DTV signal used for ranging, the receiver processing requirements are minimal. Consequently, the positioning technique can accommodate far cheaper and lower power devices than a GPS technique would require. The signal has roughly six times the bandwidth of GPS, consequently, the effects of urban and indoor multipath are substantially mitigated. The full rollout of the DTV is slated to occur by May 1, 2002 for commercial broadcast stations, and by May 1, 2003 for public broadcast stations. Our technique requires no changes to the digital broadcast stations.

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Thank you for your time and we look forward to speaking with you.

Morgan R. Branch
Rosum Corporation

Cc: Magalie Roman Salas, Office of the Secretary, Federal Communications Commission

Rosum Corporation
1900 Broadway, Suite 203
Redwood City, CA 94063
Ph: (650) 298-9006 Fx: (650) 298-9084

John T. Scott, III
Verizon Wireless
1300 I Street, N.W., Suite 400 West
Washington, D.C. 20005

RE: E911 Phase II Waiver Request

August 27, 2001

To Mr. Scott:

This communication is in response to your E911 Phase II waiver request on July 25, 2001. We would like to let you know about an inexpensive and robust handset positioning solution that will meet the FCC standards for accuracy.

In December 2000, Rosum Corporation ("Rosum") through Dr. Matthew Rabinowitz and Dr. James Spilker, the architect of the Global Positioning System, began investigating a new idea for positioning mobile devices. The new idea is to use high power digital television ("DTV") signals, which will soon cover the United States and several other countries. Today, Rosum's idea of using high power DTV appears to solve the E911 problem more effectively and more economically than any of the alternatives.

In April 2001, Rosum began proprietary discussions with the primary cellular service providers and handset manufacturers. As a result of these discussions, Rosum is convinced that its DTV-based solution to Phase II E911 is cheaper and will perform better than any of the existing technologies. We realize that our DTV-based technology is entering the E911 arena at a very late stage. However, given that Verizon Wireless is applying for a waiver of the FCC's October 2001 deadline, we feel that our new technology could provide the right solution for the E911 issue.

What follows is an overview of our solution. More information is available at www.rosum.com and detailed technical documentation is available upon request.

> In order to position wireless devices indoors and outdoors throughout the United States, Rosum Corporation determines the range to high-power DTV transmitters. The FCC has mandated that all television stations broadcast a digital signal according to the ATSC (Advanced Television Systems Committee) format. The synchronization codes embedded in the ATSC DTV signals can be used for very

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Thank you for your time and we look forward to speaking with you.

Morgan R. Branch
Rosum Corporation

Cc: Magalie Roman Salas, Office of the Secretary, Federal Communications Commission

Rosum Corporation
1900 Broadway, Suite 203
Redwood City, CA 94063
Ph: (650) 298-9006 Fx: (650) 298-9084

Robert S. Foosaner
Nextel Communications, Inc.
2001 Edmund Halley Drive
Reston, VA 20191

RE: E911 Phase II Waiver Request

August 27, 2001

To Mr. Foosaner:

This communication is in response to your E911 Phase II waiver request on June 6, 2001. We would like to let you know about an inexpensive and robust handset positioning solution that will meet the FCC standards for accuracy.

In December 2000, Rosum Corporation ("Rosum") through Dr. Matthew Rabinowitz and Dr. James Spilker, the architect of the Global Positioning System, began investigating a new idea for positioning mobile devices. The new idea is to use high power digital television ("DTV") signals, which will soon cover the United States and several other countries. Today, Rosum's idea of using high power DTV appears to solve the E911 problem more effectively and more economically than any of the alternatives.

In April 2001, Rosum began proprietary discussions with the primary cellular service providers and handset manufacturers. As a result of these discussions, Rosum is convinced that its DTV-based solution to Phase II E911 is cheaper and will perform better than any of the existing technologies. We realize that our DTV-based technology is entering the E911 arena at a very late stage. However, given that Nextel is applying for a waiver of the FCC's October 2001 deadline, we feel that our new technology could provide the right solution for the E911 issue.

What follows is an overview of our solution. More information is available at www.rosum.com and detailed technical documentation is available upon request.

> In order to position wireless devices indoors and outdoors throughout the United States, Rosum Corporation determines the range to high-power DTV transmitters. The FCC has mandated that all television stations broadcast a digital signal according to the ATSC (Advanced Television Systems Committee) format. The synchronization codes embedded in the ATSC DTV signals can be used for very

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Thank you for your time and we look forward to speaking with you.

Morgan R. Branch
Rosum Corporation

Cc: Magalie Roman Salas, Office of the Secretary, Federal Communications Commission

Rosum Corporation
1900 Broadway, Suite 203
Redwood City, CA 94063
Ph: (650) 298-9006 Fx: (650) 298-9084

Laura L. Holloway
Nextel Communications, Inc.
2001 Edmund Halley Drive
Reston, VA 20191

RE: E911 Phase II Waiver Request

August 27, 2001

To Ms. Holloway:

This communication is in response to your E911 Phase II waiver request on June 6, 2001. We would like to let you know about an inexpensive and robust handset positioning solution that will meet the FCC standards for accuracy.

In December 2000, Rosum Corporation ("Rosum") through Dr. Matthew Rabinowitz and Dr. James Spilker, the architect of the Global Positioning System, began investigating a new idea for positioning mobile devices. The new idea is to use high power digital television ("DTV") signals, which will soon cover the United States and several other countries. Today, Rosum's idea of using high power DTV appears to solve the E911 problem more effectively and more economically than any of the alternatives.

In April 2001, Rosum began proprietary discussions with the primary cellular service providers and handset manufacturers. As a result of these discussions, Rosum is convinced that its DTV-based solution to Phase II E911 is cheaper and will perform better than any of the existing technologies. We realize that our DTV-based technology is entering the E911 arena at a very late stage. However, given that Nextel is applying for a waiver of the FCC's October 2001 deadline, we feel that our new technology could provide the right solution for the E911 issue.

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Thank you for your time and we look forward to speaking with you.

Morgan R. Branch
Rosum Corporation

Cc: Magalie Roman Salas, Office of the Secretary, Federal Communications Commission

Rosum Corporation
1900 Broadway, Suite 203
Redwood City, CA 94063
Ph: (650) 298-9006 Fx: (650) 298-9084

Charles Townsend
Hawaiian Wireless, Inc.
15 Westminster
Providence, RI 02903

RE: E911 Phase II Waiver Request

August 27, 2001

Dear Mr. Charles Townsend:

This communication is in response to your E911 Phase II waiver request on November 8, 2000. We would like to let you know about an inexpensive and robust handset positioning solution that will meet the FCC standards for accuracy.

In December 2000, Rosum Corporation ("Rosum") through Dr. Matthew Rabinowitz and Dr. James Spilker, the architect of the Global Positioning System, began investigating a new idea for positioning mobile devices. The new idea is to use high power digital television ("DTV") signals, which will soon cover the United States and several other countries. Today, Rosum's idea of using high power DTV appears to solve the E911 problem more effectively and more economically than any of the alternatives.

In April 2001, Rosum began proprietary discussions with the primary cellular service providers and handset manufacturers. As a result of these discussions, Rosum is convinced that its DTV-based solution to Phase II E911 is cheaper and will perform better than any of the existing technologies. We realize that our DTV-based technology is entering the E911 arena at a very late stage. However, given that Hawaiian Wireless is applying for a waiver of the FCC's October 2001 deadline, we feel that our new technology could provide the right solution for the E911 issue.

What follows is an overview of our solution. More information is available at www.rosum.com and detailed technical documentation is available upon request.

> In order to position wireless devices indoors and outdoors throughout the United States, Rosum Corporation determines the range to high-power DTV transmitters. The FCC has mandated that all television stations broadcast a digital signal according to the ATSC (Advanced Television Systems Committee) format. The synchronization codes embedded in the ATSC DTV signals can be used for very

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Unlike the terrestrial AOA/TOA (Angle-of-Arrival/Time-of-Arrival) positioning systems for cell phones, this technique requires no change to the hardware of the cellular base station. When used to position cell phones, the technique is independent of the air-interface, such as GSM (global system for mobile communications) or CDMA (code division multiple access). Since a wide range of UHF frequencies have been allocated to DTV transmitters, there is redundancy built into the system to protect against deep fades on particular frequencies due to absorption, multipath and other attenuating effects. Since Rosum technology makes use of pre-existing infrastructure, pre-allocated spectrum, and does not become obsolete when the cellular protocols change, the cost of the system is far less than techniques requiring upgrades to the cellular network. Unlike the terrestrial AOA/TOA systems, our technique can achieve positioning accuracies of a few meters. The Rosum technology may be used to position cell phones, PDA's (personal digital assistants), pagers, cars, OCDMA (orthogonal code division multiple access) transceivers and a host of other devices.

Thank you for your time and we look forward to speaking with you.

Morgan R. Branch
Rosum Corporation

Cc: Magalie Roman Salas, Office of the Secretary, Federal Communications Commission

Rosum Corporation
1900 Broadway, Suite 203
Redwood City, CA 94063
Ph: (650) 298-9006 Fx: (650) 298-9084

Jouett Kinney, Regulatory Analyst
Cincinnati Bell Wireless LLC
221 East Fourth Street
Cincinnati, OH 45202

RE: E911 Phase II Waiver Request

August 27, 2001

Dear Jouett Kinney:

This communication is in response to your E911 Phase II waiver request on April 30, 2001. We would like to let you know about an inexpensive and robust handset positioning solution that will meet the FCC standards for accuracy.

In December 2000, Rosum Corporation ("Rosum") through Dr. Matthew Rabinowitz and Dr. James Spilker, the architect of the Global Positioning System, began investigating a new idea for positioning mobile devices. The new idea is to use high power digital television ("DTV") signals, which will soon cover the United States and several other countries. Today, Rosum's idea of using high power DTV appears to solve the E911 problem more effectively and more economically than any of the alternatives.

In April 2001, Rosum began proprietary discussions with the primary cellular service providers and handset manufacturers. As a result of these discussions, Rosum is convinced that its DTV-based solution to Phase II E911 is cheaper and will perform better than any of the existing technologies. We realize that our DTV-based technology is entering the E911 arena at a very late stage. However, given that Cincinnati Bell is applying for a waiver of the FCC's October 2001 deadline, we feel that our new technology could provide the right solution for the E911 issue.

What follows is an overview of our solution. More information is available at www.rosum.com and detailed technical documentation is available upon request.

> In order to position wireless devices indoors and outdoors throughout the United States, Rosum Corporation determines the range to high-power DTV transmitters. The FCC has mandated that all television stations broadcast a digital signal according to the ATSC (Advanced Television Systems Committee) format. The synchronization codes embedded in the ATSC DTV signals can be used for very

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Thank you for your time and we look forward to speaking with you.

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Rosum Corporation

Cc: Magalie Roman Salas, Office of the Secretary, Federal Communications Commission

Rosum Corporation
1900 Broadway, Suite 203
Redwood City, CA 94063
Ph: (650) 298-9006 Fx: (650) 298-9084

Glenn S. Rabin
Vice President
Federal Regulatory Affairs
ALLTEL Corporation
601 Pennsylvania Ave., N.W.
Washington, D.C. 20004

RE: E911 Phase II Waiver Request

August 29, 2001

Dear Glenn S. Rabin:

This communication is in response to your E911 Phase II waiver request on July 25, 2001. We would like to let you know about an inexpensive and robust handset positioning solution that will meet the FCC standards for accuracy.

In December 2000, Rosum Corporation ("Rosum") through Dr. Matthew Rabinowitz and Dr. James Spilker, the architect of the Global Positioning System, began investigating a new idea for positioning mobile devices. The new idea is to use high power digital television ("DTV") signals, which will soon cover the United States and several other countries. Today, Rosum's idea of using high power DTV appears to solve the E911 problem more effectively and more economically than any of the alternatives.

In April 2001, Rosum began proprietary discussions with the primary cellular service providers and handset manufacturers. As a result of these discussions, Rosum is convinced that its DTV-based solution to Phase II E911 is cheaper and will perform better than any of the existing technologies. We realize that our DTV-based technology is entering the E911 arena at a very late stage. However, given that ALLTEL is applying for a waiver of the FCC's October 2001 deadline, we feel that our new technology could provide the right solution for the E911 issue.

What follows is an overview of our solution. More information is available at www.rosum.com and detailed technical documentation is available upon request.

> In order to position wireless devices indoors and outdoors throughout the United States, Rosum Corporation determines the range to high-power DTV transmitters. The FCC has mandated that all television stations broadcast a digital signal

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Thank you for your time and we look forward to speaking with you.

Morgan R. Branch
Rosum Corporation

Cc: Magalie Roman Salas, Office of the Secretary, Federal Communications Commission